

**FINAL
ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT
GRASSLAND BYPASS PROJECT**

Lead Agencies: U.S. Department of the Interior, Bureau of Reclamation (Reclamation),
Mid-Pacific Region, Sacramento and Fresno, California; and
San Luis and Delta-Mendota Water Authority (Authority), Los Banos, California

Cooperating Agencies: U.S. Fish and Wildlife Service; U.S. Environmental Protection Agency; Regional Water
Quality Control Board; California Department of Fish and Game

This Final Environmental Impact Statement/Environmental Impact Report (Final EIS/EIR) has been prepared in compliance with the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), and Reclamation procedures for NEPA compliance. Reclamation and the Authority prepared this Final EIS/EIR for the new Use Agreement that would continue the Grassland Bypass Project (2001 Use Agreement) for the period October 1, 2001 through December 31, 2009. The original Use Agreement, dated November 3, 1995, allowed the Authority to use a portion of the San Luis Drain (Drain) to convey agricultural drainwater through adjacent wildlife management areas to Mud Slough, a tributary to the San Joaquin River. The 1995 Use Agreement allowed for use of the Drain until September 30, 2001. The proposed 2001 Use Agreement would permit the Authority to continue the Grassland Bypass Project through December 31, 2009.

The purpose of the Proposed Action is:

- to continue separation of unusable agricultural drainwater discharged from the Grassland Drainage Area from wetland water supply conveyance channels for the period 2001 through 2009, and
- to facilitate drainage management that maintains the viability of agriculture in the Project Area and promotes continuous improvement in water quality in the San Joaquin River.

The proposed continuation of the Grassland Bypass Project is needed to assure that any future use of the Drain beyond September 30, 2001, is consistent with long-term drainage options and provides for compliance with applicable water quality control programs.

The EIS/EIR examines two other alternatives: No Action, and one other alternative that was determined to meet the project's purpose and need: the Mud Slough Bypass Alternative. This alternative is similar to the Grassland Bypass Alternative; however, a conveyance facility would be constructed at the terminus of the Drain to convey the drainwater directly to the San Joaquin River below its confluence with the Merced River. Under this alternative, agricultural drain water would be removed from more than 100 miles of wetlands channels.

Under both the Proposed Action and the Mud Slough Bypass Alternative, the volume and concentration of the drainwater would be progressively reduced to meet water quality objectives that will become effective in the San Joaquin River in 2005 and 2010.

The Proposed Action is located in the northwestern portion of Fresno County and central Merced County in California. The Mud Slough Bypass Alternative would extend into Stanislaus County.

Reclamation will not make a decision on the proposed action until 30 days after release of the Final EIS/EIR. After the 30-day waiting period, Reclamation will complete a Record of Decision (ROD). The ROD will state the action that will be implemented and will discuss all factors leading to the decision. The Authority expects to consider approval of the Proposed Action at a meeting of the Board of Directors to be held in July, to make any findings required by CEQA, and to issue a Notice of Determination pursuant to CEQA.

For further information regarding this Final EIS/EIR, contact Mr. Michael Delamore, U.S. Bureau of Reclamation, South-Central California Area Office, 1243 N Street, Fresno, CA 93721-1813, (559) 487-5039, fax: (559) 487-5130; or Mr. Joseph C. McGahan, Regional Drainage Coordinator, (for San Luis and Delta-Mendota Water Authority), Summers Engineering, Inc., P.O. Box 1122 Hanford, CA 93232-1122, (559) 582-9237, fax: (559) 582-7632.

SCH#: 1999091025

ES.1 BACKGROUND

This report has been prepared to analyze the actions affecting the human environment for the new Use Agreement for the proposed Grassland Bypass Project (2001 Use Agreement) in accordance with the National Environmental Policy Act of 1969, as amended (NEPA), and the California Environmental Quality Act of 1970 (CEQA). The NEPA/CEQA process for this Environmental Impact Statement/Environmental Impact Report (EIS/EIR) was initiated in August 1999. The U.S. Bureau of Reclamation, Mid-Pacific Region (Reclamation) is the lead agency under NEPA, and the San Luis and Delta-Mendota Water Authority (the Authority) is the lead agency under CEQA. The major federal action significantly affecting the quality of the human environment is the execution of the 2001 Use Agreement by Reclamation for the period October 1, 2001, through December 31, 2009. The CEQA action is the approval and implementation of the Grassland Bypass Project by the Authority (following certification of the Final EIR).

The original Use Agreement, dated November 3, 1995, allowed the Authority to use a portion of the San Luis Drain (the Drain) to convey agricultural drainwater through adjacent wildlife management areas to Mud Slough, tributary to the San Joaquin River. The original project was implemented October 1, 1996, based upon the November 1995 "Agreement for Use of the San Luis Drain" (Agreement No. 6-07-20-w1319) between Reclamation and the Authority (1995 Use Agreement). A Finding of No Significant Impact (FONSI No. 96-01-MP) was adopted by Reclamation for the original project, and environmental commitments set forth in the FONSI were made an integral component of the 1995 Use Agreement.¹ The 1995 Use Agreement and its extension in 1999 allowed for use of the Drain for a 5-year period that concludes September 30, 2001. The proposed 2001 Use Agreement would permit the Authority to implement the Grassland Bypass Project through 2009. The proposed 2001 Use Agreement is included in this EIS/EIR as Appendix A.

In March 1996, the Grassland Area Farmers (GAF) formed a regional drainage entity under the umbrella of the Authority to implement the Grassland Bypass Project and manage subsurface drainage within the Grassland Drainage Area (GDA). Participants include the Broadview Water District, Charleston Drainage District, Firebaugh Canal Water District, Pacheco Water District, Panoche Drainage District, Widren Water District, and the Camp 13 Drainers (an association of landowners located in the Central California Irrigation District). GAF's drainage area currently consists of approximately 97,400 gross acres of irrigated farmland on the west side of San Joaquin Valley and is known as the GDA. Discharges of subsurface drainage from this area contain salt, selenium, and boron. The GDA is illustrated on Figure ES-1.

ES.2 PROJECT PURPOSE AND NEED

The Grassland Bypass Project uses the Grassland Bypass Channel and the San Luis Drain to remove agricultural drainwater from wetland water supply channels. The Project is needed because prior to 1996 when the current project began, drainwater contaminated these channels with salts, selenium, and other trace elements.²

The purpose of the new Project is as follows:

1. To continue separation of unusable agricultural drainwater discharged from the GDA from wetland water supply conveyance channels for the period 2001-2009, and
2. To facilitate drainage management that maintains the viability of agriculture in the Project Area and promotes continuous improvement in water quality in the San Joaquin River.

The proposed continuation of the Grassland Bypass Project is needed to assure that any future use of the Drain beyond September 30, 2001, is (1) consistent with long-term drainage options and (2) provides for compliance with applicable water quality control programs. The Proposed Project is to continue the 1995 Grassland Bypass Project until 2009 under a new use agreement. Existing drainage management in the Project Area is based upon use of a segment of the Drain under terms and conditions of the 1995 Use Agreement between the Authority and

¹ The FONSI required preparation of an EIS if the project was proposed to continue past the original short-term use agreement.

² This section summarizes the complete explanation of the Project's purpose and need, which is presented in Section 1.2.

Reclamation (original Grassland Bypass Project). Current drainage management is also regulated by Waste Discharge Requirements issued by the Central Valley Regional Water Quality Control Board in 1998, and by the Basin Plan. The 1995 Use Agreement expires on September 30, 2001, and the Waste Discharge Requirements require submission of a Report of Waste Discharge for discharges beyond that date.

ES.3 PROJECT OBJECTIVES

The overall objective of the proposed 2001 Use Agreement/Grassland Bypass Project is for the GAF to use a 28-mile segment of the Drain to convey agricultural subsurface drainwater (approximately 35,000 acre-feet annually) to a point of discharge at Mud Slough on the San Joaquin River system. To continue to use the Drain, the GAF agree to meet specific load values for selenium. The Proposed Project includes the two specific objectives identified as the Project purpose in Section ES.2

The GAF must manage drainage from the GDA consistent with the terms and conditions of the proposed 2001 Use Agreement (Volume I, Appendix A). Additional objectives included in the 2001 Use Agreement are to:

- Ensure that continued use of the Drain as provided in this Agreement results in improvement in water quality and environmental conditions in the San Joaquin River, delta, and estuary relative to the quality that existed prior to the term of this Agreement, insofar as such quality or conditions may be affected by drainage discharges from the Drainage Area, and to ensure that such continued use of the Drain does not reduce the ability to meet the salinity standard at Vernalis compared to the ability to meet the salinity standard that existed prior to the term of this Agreement.
- Pursue planning to identify by 2006 the means to meet water quality objectives in Mud Slough by the Regional Board's Basin Plan compliance date. These efforts will be coordinated with the California Department of Fish and Game and the United States Fish and Wildlife Service to accommodate their activities relating to endangered and nonendangered species in or adjacent to Mud Slough.

ES.4 PUBLIC AND AGENCY INVOLVEMENT

The public involvement process began September 2, 1999, with the issuance of a Notice of Preparation of a Joint Environmental Impact Statement/Impact Report (EIS/EIR) on the Grassland Bypass Project. A Notice of Intent was published on the same day in the *Federal Register*. The notices announced three public scoping meetings for September 27, 29, and 30, 1999, and requested that comments on the content of the EIS/EIR be submitted by October 5, 1999. Comments addressed the following concerns: project description, alternatives, water quality/hydraulics/water supply, biological resources, economics, and cumulative impacts.

The Draft EIS/EIR was sent to the State Clearinghouse as required by CEQA on December 19, 2000. The Clearinghouse distributed the document to selected state agencies: Resources Agency; Department of Fish and Game, Region 4; Office of Historic Preservation; Department of Parks and Recreation; Reclamation Board; Department of Water Resources; Caltrans, Division of Transportation Planning; Department of Conservation; State Water Resources Control Board, Division of Water Quality; State Water Resources Control Board, Division of Water Rights; Regional Water Quality Control Board, Region 5 (Fresno); Regional Water Quality Control Board, Region 5 (Sacramento); Native American Heritage Commission; and State Lands Commission. In addition to the responsible agencies above, the Draft EIS/EIR was submitted to the Fresno County Local Agency Formation Commission for the Camp 13 area.

Consistent with Reclamation's procedures for implementing NEPA, the Draft EIS/EIR was filed with the U. S. Environmental Protection Agency on December 21, and a notice was placed in the *Federal Register* on December 26, 2000, announcing the availability of the document for public review and commencing the official public review period, which closed February 27, 2001.

Written comments on the Draft EIS/EIR were received from 19 agencies and individuals, and oral testimony was presented at two public hearings. The comment letters, hearing transcripts, and responses to these comments are included in Appendix I (Volume I).

Federal, state, and local agencies were involved with Reclamation and the Authority in the development of this EIS/EIR through three committees and through specific consultations and agreements.

ES.5 ALTERNATIVES CONSIDERED AND PREFERRED ALTERNATIVE

The **No Action Alternative** is defined as what could be expected to occur in the foreseeable future (after October 1, 2001) if the Use Agreement for the San Luis Drain is not approved. Under this alternative, the GAF would not exist as a management group and would not have use of the Drain. Agricultural subsurface drainage would not be collected into a single drainage outlet (Grassland Bypass Channel) for conveyance to the Drain.

No Action is not the existing condition (as of September 1999 when the public scoping was initiated). Rather it is a "constructed alternative" based not only upon failing to take the Proposed Action but also upon discontinuing an ongoing program for drainage management, with no existing alternative practices that will maintain viable agriculture or the environmental benefits that the original Grassland Bypass Project (1995 Use Agreement) has achieved.

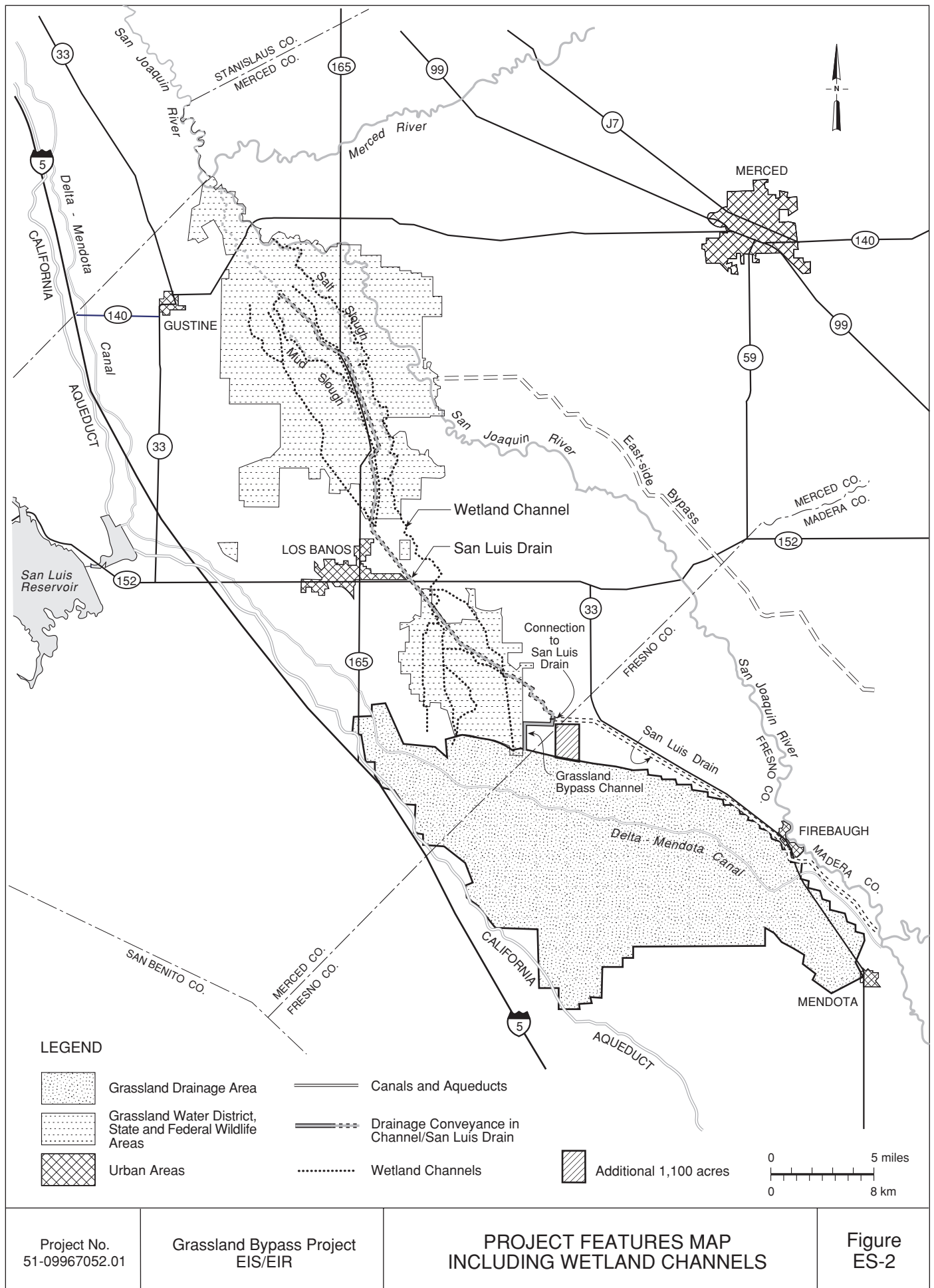
No Action would require infrastructure improvements, which are not currently planned or financed, at both the district and farmer level. For example, GAF farmers and district managers indicate that it is not realistic to assume that 100 percent of subsurface water generated by sumps would be recycled, due to physical constraints and to the mismatch in certain months between the volumes of water for which recirculation would be required and the capacity of cropped land to receive such water, without significant crop damage (Grassland Steering Committee, October 2000). Without the Grassland Bypass Project and the management of discharges, seepage into wetland habitats that would violate standards would occur, and unmanageable ponding of high selenium water at the lower elevations on private property would occur.

The **Proposed Action, Grassland Bypass Project**, under the proposed 2001 Use Agreement would consolidate subsurface drainflows on a regional basis and utilize a portion of the federal San Luis Drain to convey drainflows around wetland habitat areas. The Project would collect drainwater from the 97,400-acre GDA and an adjacent 1,100-acre area, and place it into the Drain at a point near Russell Avenue (Milepost 105.72, Check 19). The drainage would continue to travel in the Drain to its northern terminus (Milepost 78.65). From here, the drainage would enter Mud Slough (North) for 6 miles before reaching the San Joaquin River at a location 3 miles upstream of its confluence with the Merced River.

Features of the Proposed Action (see Figure ES-2) include the following:

- The continued separation of agricultural drainwater from 93 miles of conveyance channels in the Grassland wetlands and wildlife refuges.³
- The use of the Grassland Bypass Channel, a 4-mile-long earthen constructed ditch and an existing drain that was modified to convey drainwater from the Panoche and Main Drain to the San Luis Drain at Russell Avenue. Drainwater from Charleston Drainage District, Pacheco Water District, and Panoche Drainage District would continue to be collected in the Panoche Drain. Drainwater from Broadview Water District, Firebaugh Canal Water District, and the Camp 13 drainage area would continue to be conveyed in the existing Main Drain. Drainage collected from any adjacent lands added to the Project Area would be added to the Main Drain, the Panoche Drain, or the Grassland Bypass Channel within their existing design capacities.
- Use of approximately 28 miles in the San Luis Drain to its northern terminus (Milepost 78.65). From that point, the drainwater would enter Mud Slough (North) for 6 miles before reaching the San Joaquin River at a location 3 miles upstream of its confluence with the Merced River.
- Continuation of the use of a portion of the San Luis Drain.
- Retaining the original design flow capacity for the Grassland Bypass Project that limited the flow to 150 cubic feet per second (cfs), primarily to prevent suspension of sediments.
- Negotiation with Reclamation (and other stakeholders) for a new 2001 Use Agreement for the Drain.

³ A prohibition of discharge has been in place since January 10, 1997. Agricultural drainage exceeding 2 parts per billion (ppb) selenium will not be allowed by the Regional Water Quality Control Board in the wetland channels.



- Construction of an In-Valley Treatment/Drainage Reuse Facility on up to 6,200 acres, within the GDA.

In addition to No Action and Proposed Action Alternatives, one other alternative was determined to meet the Project's purpose and need/objectives and to be implementable: the **Mud Slough Bypass Alternative**. This alternative is similar to the Grassland Bypass Project in several features. However, it would not use Mud Slough to convey drainwater, a major difference. Instead, a conveyance facility would be constructed that would connect to the end of the San Luis Drain at Mud Slough and convey the drainwater approximately 15 miles to discharge directly to the San Joaquin River below its confluence with the Merced River. The drain extension would be a canal or an underground pipeline with a flow capacity of 100 cfs, enough to convey GDA water under normal conditions but not drainage from other areas or other projects (see Figure ES-3).

The Mud Slough Bypass Alternative meets the CEQA requirement to avoid or substantially lessen potentially significant impacts of the Proposed Project on special-status species. Prior to conducting the detailed impact analyses, the project proponents identified Mud Slough as an area of potential impact due to the discharge of all of the drainage at this location. As shown in Table ES-1, summary of impacts, the Mud Slough Bypass Alternative is the environmentally superior alternative. Its greatest benefit is that it would permit habitat restoration in Mud Slough prior to 2010, an area identified as being suitable habitat for the giant garter snake once drainage is removed. Impacts from pipeline or canal construction would be short term and temporary. At issue, however, is the extent to which wetlands such as Mud Slough bioaccumulate selenium such that the selenium load from the drainage is less when it reaches the San Joaquin River. Under the Mud Slough Bypass Alternative, drainage would be discharged directly to the San Joaquin River.

ES.6 SUMMARY OF ENVIRONMENTAL EFFECTS

Table ES-1 provides a summary of all of the environmental effects and mitigation for No Action, the Grassland Bypass Project, and the Mud Slough Bypass Alternative. The existing condition sets the baseline against which the alternatives are evaluated for CEQA, while No Action is the baseline for comparison of alternatives for NEPA. Impact statements are abbreviated; see Chapters 4 through 12 for complete statements of impact. The Mitigation Monitoring and Reporting Program required by CEQA is provided in Chapter 14. Symbols used in the table for CEQA determinations of impact including beneficial impacts are:

S: Significant adverse impact
 SU: Significant unavoidable adverse impact
 PS: Potentially significant adverse impact
 PSU: Potentially significant unavoidable adverse impact
 LS: Less-than-significant adverse impact

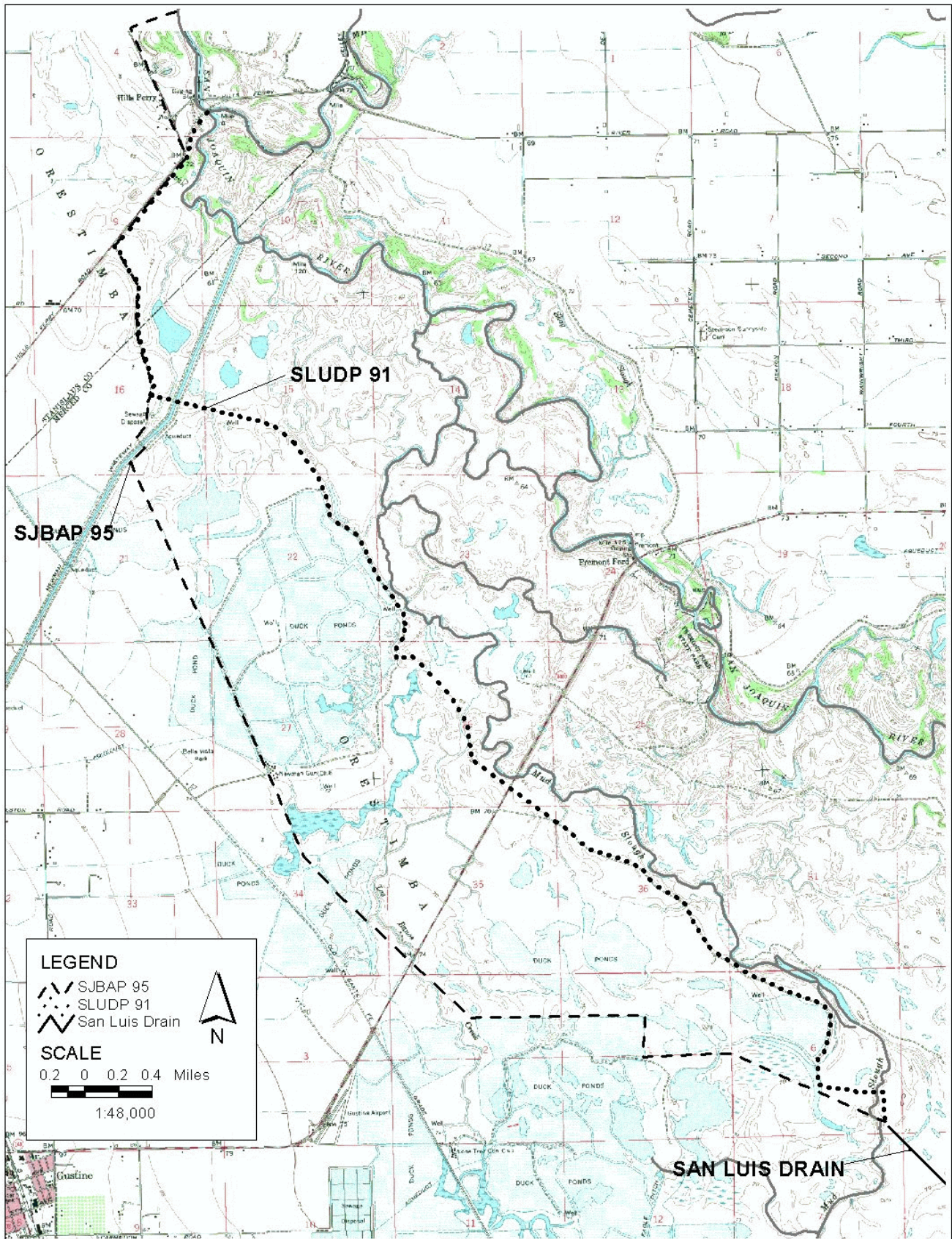
N: No adverse impact
 B: Beneficial impact (either significant or less than significant)
 na: Not applicable

Symbols used for the NEPA comparison of alternatives are:

–: Negative effect
 o: Neutral effect or minimal effect
 +: Positive effect

Table ES-2 compares the three alternatives with the Project purposes (Section ES.2). Both action alternatives meet the project purposes. In contrast, the No Action Alternative fails to meet two out of the three purposes. It does not keep drainwater out of the wetland channels; the selenium objective of 2 ppb is not met but potentially would increase to as much as 9 ppb (Section 4.2.2.2). Also, the viability of agriculture would be adversely affected. In comparison to the action alternatives, the No Action Alternative would result in reduced farm revenues by 30 percent, fewer direct agricultural jobs (800 jobs), and fewer indirect jobs in the region (1,500 jobs) by 2009 (Section 8.2.2.1).

Figure ES-3



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Grassland Bypass Project
EIS/EIR

Project No. 51-09967052.01

POSSIBLE ALIGNMENTS FOR
MUD SLOUGH BYPASS

Figure
ES-3

Table ES-1 Summary Comparison of Impact/Effects of Alternatives					
Affected Resource and Area of Potential Impact	No Action Compared to Existing Condition	Grassland Bypass Project Compared to:		Mud Slough Bypass Alternative Compared to:	
		No Action	Existing	No Action	Existing
Surface Water					
1. Selenium in sloughs and San Joaquin River (SJR) upstream of Merced River	B	-	B	0	B
2. Selenium in wetlands during storm events	PS	+	N	+	N
3. Selenium in wetlands during dry weather	PS	+	N	+	N
4. Selenium in SJR downstream of Merced River	B	-	B	-	B
5. Salinity in sloughs/SJR upstream of Merced River	B	-	B	0	B
6. Salinity in SJR downstream of Merced River	B	-	B	-	B
7. Boron in sloughs/SJR upstream of Merced River	B	-	B	0	B
8. Boron in SJR downstream of Merced River	B	-	B	-	B
9. Sediment accumulation in the Drain Mitigation: Sediment Management Plan	N	0	PS LS w/mitigation	0	PS LS w/mitigation
10. Molybdenum in sloughs/SJR upstream of Merced River	B	-	B	0	B
11. Molybdenum in SJR downstream of Merced River	B	0	B	0	B
12. Water quality in the Drain	PS	+	LS	+	LS
13. Cumulative	B	-	B	-	B
Soils and Groundwater					
1. Drainwater production	N	0	N	0	N
2. Area affected by shallow water	LS	0	N	0	N
3. Bare-soil evaporation rate	LS	0	N	0	N
4. Uncontrolled seepage	S	+	N	+	N
5. Uncontrolled groundwater discharge	N	0	N	0	N
6. Soil salinity	S	+	N	+	N
7. Groundwater salinity	S	+	N	+	N
8. Cumulative	S	+	N	+	N
Biological Resources					
1. Special-status species Mitigation: measures to avoid, minimize, and compensate for impacts to be determined in Section 7 consultation process	PS	-	PS LS w/mitigation	-	PS LS w/mitigation
2. Wetlands Mitigation: measures to avoid, minimize, and compensate for construction impacts	SU	+	B	+	PS LS w/mitigation
3. Aquatic Habitats (flow and temperature)	N	0	N	0	N
4. Bioaccumulation and food chain	SU/B	-	BL/S	+	BL/S
a. Aquatic	SU/B	-	BL/S	+	BL/S

S - significant adverse impact; SU - significant unavoidable adverse impact; PS - potentially significant adverse impact; PSU - potentially significant unavoidable adverse impact; LS - less-than-significant adverse impact; N - no adverse impact; B - beneficial impacts; na - not applicable; – negative effect; 0 neutral effect or minimal effect; + positive effect

Table ES-1 Summary Comparison of Impact/Effects of Alternatives					
Affected Resource and Area of Potential Impact	No Action Compared to Existing Condition	Grassland Bypass Project Compared to:		Mud Slough Bypass Alternative Compared to:	
		No Action	Existing	No Action	Existing
b. In-Valley Facility	n/a	+	LS	+	LS
5. Cumulative	PS	+	N	+	N
Land Uses					
1. Agriculture	SU	+	N	+	N
2. Wildlife Habitat/Refuges	PS	+	N	+	B
3. Recreation	PS/B	0	N	0	B
4. Cumulative	PS	0	N	0	N
Socioeconomic Resources					
1. Total farm revenue	SU	+	B	+	B
2. Total farm profit	LS	0	LS	0	LS
3. Total regional output	LS	0	LS	0	LS
4. Total regional income	LS	0	LS	0	LS
5. Total regional employment	LS	0	LS	0	LS
6. Cumulative Mitigation (valley-wide): measures to remove salt from soils, minimize drainage reuse, or subsidize costs of treatment facilities to improve farm profits	PS	0	PS LS w/mitigation	0	PS LS w/mitigation
Cultural Resources					
1. Historic properties	N	0	N	0	N
2. Prehistoric sites Mitigation: Preconstruction survey	N	0	N	-	PS LS w/mitigation
3. Cumulative Mitigation: Preconstruction survey	N	0	N	-	PS LS w/mitigation
Energy Resources					
1. Power consumption	LS	0	LS	0	LS
2. Cumulative	LS	0	LS	0	LS
Indian Trust Assets					
1. Presence of ITAs	N	0	N	0	N
Environmental Justice					
1. Economic resources	S	+	B	+	B
2. Aquatic/Recreation resources	N	0	N	0	N
3. Cumulative	PS	0	LS	0	LS

S - significant adverse impact; SU - significant unavoidable adverse impact; PS - potentially significant adverse impact; PSU - potentially significant unavoidable adverse impact; LS - less-than-significant adverse impact; N - no adverse impact; B - beneficial impacts; na - not applicable; – negative effect; 0 neutral effect or minimal effect; + positive effect

Table ES-2
Comparison of Alternatives with Project Purposes

Purpose & Need Statement	No Action Alternative	Grassland Bypass Project	Mud Slough Bypass Alternative
Continue the separation of unusable agricultural drainwater discharged from the GDA from wetland water supply conveyance channels	No – some drainwater would enter wetland channels	Yes – continued separation of drainwater from 93 miles of wetland channels; continued discharge to 6 miles of Mud Slough	Yes – separation of drainwater from 99 miles of wetland channels, including all of Mud Slough
Facilitate drainage management that maintains the viability of agriculture	No – extraordinary efforts would be needed by individual farmers to reduce and recycle drainwater within the GDA; land taken out of production immediately due to ponding of drainwater on the surface and in the long term due to economic impacts	Yes – with GAF and Regional Drainage Coordinator, In-Valley Treatment Facility, and Compliance Monitoring Program	Yes – same as Grassland Bypass Project with additional expense of Mud Slough Bypass construction and mitigation
Promote continuous improvement in water quality in the San Joaquin River	Yes – immediate improvement in water quality due to no direct discharge; No – some uncontrolled subsurface drainage into wetland channels	Yes – according to Waste Discharge Requirements and control programs	Yes – same as Grassland Bypass Project